

China's PLAAF Power Projection in the 21st Century

**A MONOGRAPH
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FORT LEAVENWORTH, KANSAS**

Academic Year 1999-2000

Approved for Public Release Distribution is Unlimited

20010515 068

REPORT DOCUMENTATION PAGE			Form Approved OMB No. 0704-0188	
Public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington, VA 22202-4302, and to the Office of Management and Budget, Paperwork Reduction Project (0704-0188), Washington, DC 20503.				
1. AGENCY USE ONLY (Leave blank)		2. REPORT DATE 15 May 2000		3. REPORT TYPE AND DATES COVERED monograph
4. TITLE AND SUBTITLE China's PLAAF Power Projection in the 21st Century			5. FUNDING NUMBERS	
6. AUTHOR(S) Maj Sharon L. Holmes, USAF				
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) School of Advanced Military Studies Fort Leavenworth, Kansas 66027-6900			8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)			10. SPONSORING/MONITORING AGENCY REPORT NUMBER	
11. SUPPLEMENTARY NOTES				
12a. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release. Distribution unlimited.			12b. DISTRIBUTION CODE	
13. ABSTRACT (Maximum 200 words) see attached				
14. SUBJECT TERMS			15. NUMBER OF PAGES 59	
			16. PRICE CODE	
17. SECURITY CLASSIFICATION OF REPORT unclassified	18. SECURITY CLASSIFICATION OF THIS PAGE unclassified	19. SECURITY CLASSIFICATION OF ABSTRACT unclassified	20. LIMITATION OF ABSTRACT	

ABSTRACT

CHINA'S PLAAF POWER PROJECTION IN THE 21ST CENTURY by Major Sharon L. Holmes, USAF, 63 pages.

Chinese future war and future air war theorists consider offensive-mindedness and power projection an absolute necessity for survival in a changing world environment. Although China's theories for future warfare are well beyond the technological grasp of the current day PLAAF, the Chinese suggest ideas or theories represent the 'invisible force' where advanced technological equipment meets advanced military thinking. This monograph evaluates China's power projection modernization efforts through a look at PRC future warfare theory, organizational restructuring and acquisitions against the three USAF 21st century categories for success: technological advances, streamlined combat organizations, and skilled leaders and personnel.

China is experiencing a period of transition toward a more open, conciliatory power in the Asian-Pacific region. Internal disputes in the Xinjiang-Uighur region have been mitigated through crafty diplomatic and economic gestures with the five neighboring states, establishing a mutual agreement to punish terrorists, eliminate cross-border excursions and forge joint financial ventures. On-going disputes over the one China policy in relation to Taiwan have subsided with U.S. diplomatic efforts, military demonstrations and stronger Chinese-Taiwanese economic ties. The Chinese no longer resort exclusively to military force to resolve internal conflicts. The conditions exist for a conflict in the Asian-Pacific region, however, the emphasis on building a stronger economy minimizes the likelihood of a Chinese offensive strike against neighboring countries or an offensive strike against Chinese territory or interests.

China's 1997 National Defense Policy publication presented the five principles of peaceful coexistence for the conduct of foreign, economic, and military policy. The central principle remained that of maintaining sovereignty over Mainland territorial interests and peripheral geographical and economic interests. Future warfare theorists formulated several schools of thought to modernize the military forces to meet the expectations identified in the *National Defense White Paper*. Since 1993, President Jiang Zemin supported the Local War school and their ideas have remained the most influential in the modernization effort. The Local War school focuses on rapid reaction forces, power projection, and quick decisive war.

Assessments consider the Chinese defense-industrial complex incapable of providing the technology base required for China to compete against technologically superior Western powers and partners in the Asian-Pacific region. To overcome this technology infrastructure shortfall, China has engaged in targeted purchases of hardware, components, and software through civil and military channels. Although the numbers of aircraft systems and technology acquisitions appear meager, the internal capability for adaptability and incorporation of foreign technology into future Chinese weapon systems remains a significant force multiplier.

The PLAAF through strategy, doctrine, structure, personnel, and systems are modernizing for the 21st century. The PRC provided the national defense strategy for preparing for local, modern high-technology warfare and all indicators suggests the PLAAF is methodically achieving State objectives. Time is on the side of the PRC, to expand economic markets and reinvest the capital into technological improvements for dual civil-military usage. U.S. interaction with the PRC should be focused, coordinated, and prudent. Although a credible threat is not present, the PLAAF has all the required building blocks for a power projection force in the Asian-Pacific region and should be monitored. A NSC China Working Group might provide a strategic level nodal analysis of the diplomatic, informational, military, and economic options that protect U.S. vital interests.

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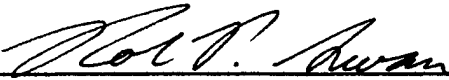
Title of Monograph: China's PLAAF Power Projection In The 21st Century

Approved by:



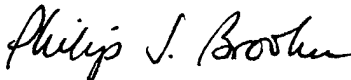
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Accepted this 15th day of May 2000

Chapter 1 China's Power Projection Air Force

The strategic tactics of "striking only after the enemy has struck" and being "reasonable, favorable, and restrained," which China pursues in local wars, not only have a unique standing in all of our contemporary political and military thinking but also reflect long standing Chinese cultural traditions.¹

The confluence of a nation's Power Projection Air Force can not be assessed in isolation from the regional and global threats confronting the target nation. The People's Republic of China People's Liberation Army Air Force (PLAAF) is in the midst of a modernization effort most likely targeted at balancing regional and global threats. This monograph highlights the threats to China, China's future war theory and methodology using the United States Air Force (USAF) power projection construct as a lens for evaluating the force modernization program of China's PLAAF and PLAAF acquisition efforts. This monograph seeks to establish the framework for assessing the viability of China developing a power projection capability within the East Asian/Pacific region while building closer economic ties with the United States.

Power projection (used interchangeably in joint doctrine with force projection) is defined as the rapid, measured forward employment of forces or military firepower, usually in response to a crisis to preclude further escalation.² The tenets or facets of power projection from an U.S. perspective are identified in the National Military Strategy. The concept of Shaping the international environment, Preparing for an uncertain future and Responding now all coalesce into the U.S. commitment to achieve global response across the spectrum of

conflict. The United States Air Force (USAF) is one important variable in the complete equation for global response through power projection.

Michael Pillsbury, a noted China researcher and expert, details the People's Republic of China (PRC) and PLAAF in-depth study and incorporation of U.S. and specifically USAF principles of future warfare. The USAF vision of future warfare encapsulated in *Global Engagement for the 21st Century* concentrates on Air and Space Superiority, Information Superiority, Precision Engagement, Agile Combat Support, Global Attack, and Rapid Global Mobility. Many of the PLAAF theoretical air constructs use these terms as the focus for modernization efforts and assessment of increased military power status.

Thomas L. Friedman, author of *Lexus and the Olive Tree*, evaluates globalization and the tenets that make a nation competitive. He defines globalization as a system, a dynamic ongoing process involving the "inexorable integration of markets, nation-states, and technologies to a degree never witnessed before."³ Recurring themes throughout Friedman's work are the integration of capital, technology, information, and decision-making in response to demands by a global market.⁴ All of the themes raised by Friedman are applicable to a nation's military competitiveness and are contained in the USAF Global Engagement in the 21st Century vision statement. This system of globalization has aligned future PRC and PLAAF warfare theories with U.S. future warfare theories.

This monograph evaluates China's power projection modernization efforts, future warfare theory, organizational restructuring, and technology

acquisitions against the backdrop of regional threats to the sovereignty of the PRC. The PRC has initiated a modernization effort targeted against all three USAF categories for success--technological acquisitions, changes in organizational structure and a focus on refining the skills of Air Force leaders and technicians.⁵ In order to build a comparable power projection infrastructure from the current PLAAF capability, China must target these three categories in a coordinated manner.

Chinese future war and future air war theorists consider offensive-mindedness and power projection an absolute necessity for survival in a changing world environment. The focus on War under Modern High Technology Conditions (WUMHTC) seeks to reconcile and consolidate information-based warfare with space-based warfare and emerging weapons technology to defeat an enemy before formal hostilities are declared.⁶ Although China's theories for future warfare are well beyond the technological grasp of the current day PLAAF, the Chinese suggest ideas or theories "represent the 'invisible force' where advanced technological equipment meets advanced military thinking."⁷ Parallels can be drawn between China's ideas and military reality in the year 2000 with Germany in the late 1920s and early 1930s, where ideas, planning, and targeted modernization birthed a formidable military instrument of power on the European continent.

Most China experts describe PRC modernization programs forged in the mid-1980s, as an effort aimed at combating growing internal and external regional threats. The PRC currently faces internal threats from low-level

insurrections in the Xinjian-Uighur area (disputes over oil and religious separatism), mafia-type groups, narcotics traffickers, weapons traders, large-scale theft cartels, and prostitution/banditry groups in rural areas.⁸ External threats are most likely from the Chinese historical rival, Japan, an unlikely Taiwanese bid for independence, or competition for control of the Spratly Islands in the South China Sea.⁹ Faced with these internal and external threats, the PRC is modernizing under the stated policy of "active defense." Mr. Peter W. Rodman, observer at the Nixon Center for Peace and Freedom, describes China's modernization effort as "a potent capability in a limited sphere of strategic action that will raise the costs and risks to the U.S. of coming to the aid of allies and friends."¹⁰ MGEN (Ret.) Edward B. Atkeson, a professional intelligence officer and researcher on China's military, noted a growing tendency toward lawlessness throughout the country and a shift in Beijing's focus on modernization from the concept of "People's War" toward a force tailored for challenges beyond China's borders.¹¹ If China's internal climate is growing more chaotic, an outward focus on external threats provides a stronger pillar of support for expanding high technology military programs and uniting opposition groups behind a national cause. In a 1998 symposium and publication entitled *Strategic Trends in China*, experts described the reorientation in political, economic, and military thought toward technologies and modernization efforts. China's reorientation from an inward focus and "People's War" has established targets to achieve eventual reunification with Taiwan, extend China's regional influence,

and protect littoral and maritime interests.¹² China's national defense reorientation poses potential conflict with U.S. national interests.

With growing internal and external threats to the PRC, the PLAAF has engaged in some targeted modernization efforts to improve power projection capability. Increased internal unrest and risk to ground logistics and personnel movement prompted the PLAAF to perform large-scale air transportation. The PLAAF focus on air transportation facilitated the wide use of commercial aircraft in China and helped improve economic growth.¹³ The PLAAF and the aviation industry have joint ventures to improve the civil aircraft infrastructure, both in the number of airframes and the command and control mechanisms.

In concert with civil air improvements, China's aviation industry has been cited for efforts to establish its own production base by acquiring specific foreign technologies and incorporating advanced technology into Chinese weapon systems.¹⁴ The Chinese purchased transport aircraft from Russia and U.S. aviation companies. In addition to transport aircraft to improve force projection, the Chinese have made some acquisitions of Airborne Warning and Control System aircraft, SU-27 and SU-30 fighter aircraft, cruise missile technology, and a national air defense network.¹⁵ Although the numbers of aircraft systems and technology acquisitions appear meager, the internal capability for adaptability and incorporation of foreign technology into future Chinese weapon systems remains a significant force multiplier. Currently, China maintains one of the most comprehensive civil air networks in the East Asian/Pacific region. Modernization

efforts coupled with organizational changes and transforming warfare theory and doctrine could forge an entirely new PLAAF in the 21st century.

Chapter 2 Threats to PRC Sovereignty and New Global Associations

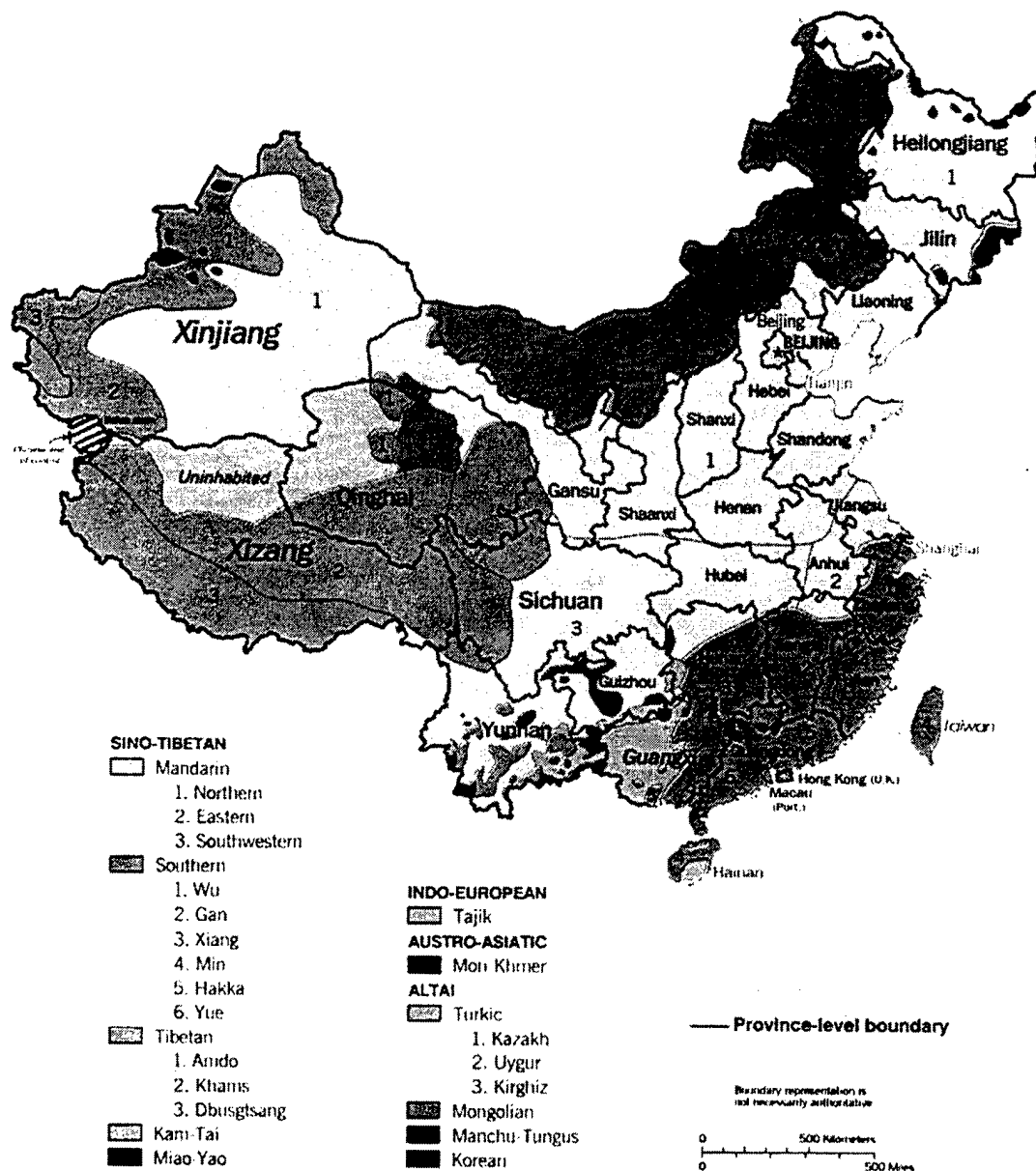
The PRC and regional specialists assess several internal and external threats to China's sovereignty. Many of the threats are founded either on age-old historical conflicts or have been transformed by modern-day economic imperatives. The sheer vastness of China's geography and the various ethnic groups within the boundaries constitute a fertile environment for internal threats. China has a population estimated by the U.S. Department of State at 1.251 billion. As a comparison, the U.S. population is estimated at .27 billion. China's 9.5M square kilometer, 3,000-mile landmass from east to west, borders with 14 countries. Comparably, the U.S. 9.6M square kilometer, 3,000-mile landmass from east to west, borders 2 countries. Internally a 91.9 percent Han Chinese and 8.1 percent Tibetan, Muslim, and Korean population account for a varied strategic background.¹⁶ Three-quarters of the population live in the countryside and are crowded onto ten percent of the suitable farming land, producing the world's largest supply of rice.¹⁷ Map 1 displays the Asian region while Map 2 and Map 3 provides a more detailed representation of China's major cities and linguistic distribution.

Michael McDevitt focused on China's geography to evaluate PRC security planning. He concluded China is secure as the dominant military power on the continent of Asia based on the military protection afforded by the Himalayas and the deserts of western China, improving militarily useful infrastructure (roads, airports, and communications media), an enormous population, and a strong sense of national identity.¹⁸ The geography coupled with the economic imperatives of globalization provides focus for the military modernization efforts and help to highlight significant internal and external threats to PRC sovereignty.



Map 1. Asia Political Map (University of Texas Map Library).

Chinese Linguistic Groups



Map 3. China's Linguistic Regions.²⁰

Internal Threats.

With such an expansive and varied geography, the PRC experiences some internal conflicts that threaten PRC interests and security. In many instances there is a historical precedent for the current-day internal hostilities. One long-standing conflict exists in the Xinjiang-Uighur area and is characterized by smoldering unrest due to low-level insurrection over disputed oil resources and religious separatism.²¹ The Xinjiang-Uighur region is home to a significant portion of the Muslim minority, as noted by the Turkic linguistic concentration in Map 3. During the 19th century, Russia supported a Muslim separatist movement in Xinjiang, aimed at draining Chinese resources and toppling the Qing (Ch'ing) dynasty.²² There are no current public tensions or statements regarding evidence of on-going Russian support for the Muslim separatist movement.

In early 1996, Beijing launched a preemptive diplomatic and economic strike to eliminate outside support for the Muslim dissent. In a coordinated, calculated effort by the PRC government, over a period from April 1996 to July 1998, a military agreement was brokered with Russia, Kazakhstan, Kyrgyzstan, and Tajikistan. Known as the "'group of five,' the Central Asian neighbors agreed to reduce border tensions, eliminate support for dissident groups, inform each other about military exercises within 100 kilometers of the borders, ban military exercises targeted toward a 'group of five' party member, and ban attack of one another."²³ Additionally, economic agreements were brokered between Kazakhstan and China for a \$9.5 billion oil and pipeline deal, automobile plant,

electrical transmission arrangements, and Chinese investment in the country as part of a 15-year economic program.²⁴ Willingness to diplomatically settle the Xinjiang-Uighur dispute might provide some insight into China's future efforts at dealing with insurrection, terrorism, and external support for such activities within China's borders.

Another, internationally recognized conflict exists between the PRC and the Republic of China (ROC-Taiwanese). The Beijing-Taiwan conflict has been raging since the mid-1940s when fifty years of Japanese occupation ended. The two opposing political parties concentrated on their respective capitals in Beijing, China and Taipei, Taiwan sought to garner internal and international support for their position of authority to govern China. In 1972, Taiwan lost a seat in the United Nations and the support of the U.S. when President Nixon recognized the PRC as the governing authority of Mainland China and Taiwan.²⁵ Later in December 1978, President Carter announced the normalization of relations with China and cancellation of the Mutual Defense Treaty with Taiwan, moving China closer in strategic realignment with the U.S.²⁶

Commencing in March 1996, Taiwanese statements purporting independence were answered by the Chinese Central Military Commission (CMC) with launch test firings of missiles in the Taiwan Straits. These missile tests prompted a response by the U.S., which deployed aircraft carriers to the region.²⁷ China heeded the U.S. military show of force and ceased further missile tests. The PRC postured to avoid a military confrontation with the U.S., continued the dialogue with U.S. representatives, and restored military to military

ties and security exchanges in late 1997.²⁸ Although, the PRC's military option was curtailed, the 1996 test firings energized the PLA to reconsider the long-standing military strategy of no-first strike. The PLA redirected the focus from nuclear build up to a conventional combined-services response to contingencies in the Taiwan Strait.²⁹ While heightened rhetoric and strong political condemnations of the independence movement in Taiwan is ongoing, military restraint has brought a measure of stability to the region.

One significant factor in regional stability is economic imperative. Out of necessity, the growing Taiwanese economic investment with Mainland China withstands the ongoing political standoff between Beijing and Taipei. Thomas Friedman's thesis of globalization superseding political differences is evident in the complex China-Taiwan-U.S. relationship. The Chinese economy had reached crisis stage with firms losing money and sliding into bankruptcy, ineffective banking systems, underdeveloped financial markets, and declining foreign investments in late 1996 to early 1997.³⁰

Christopher Patten, the last Governor of Hong Kong, reflected on the effects of the Asian economic crisis and concluded, "as economies become part of the global economy, nation's face greater pressures to change policy or advance divergent policies."³¹ In Hong Kong, negotiations between China, Britain, U.S., and Hong Kong officials revealed the strength of economics to shift political alliances and military support agreements. Western political and military backing of Hong Kong vanished in the midst of a global economy. The PRC is proceeding along a similar path to reunify Taiwan, founded on an economic

imperative to sustain growth in both regions. The propensity to respond militarily in the Taiwan Straits as in past conflicts, including defeat of the Taiwanese government in 1949, is minimized by interlocking Chinese-Taiwanese-U.S. economic ties.

External Threats.

A brief look at major internal threats to the PRC highlighted the interrelated diplomatic, economic, and military factors that often involve foreign states in a nation's sovereign concerns. *Strategic Trends in China* identified three major challenges for the PRC: national effort to achieve eventual reunification with Taiwan, extending China's regional influence, and protecting littoral and maritime interests.³² Extending China's regional influence includes neighboring and regional states like Russia, Japan, Korea, Vietnam, India, Pakistan, Indonesia and the disputed Spratly Islands.

China's Neighbor States.

Russian relations with China have evolved and transformed since the 1950s. After the PLA seized control of Beijing under the leadership of Mao Zedong, the Soviet Union recognized the new government and signed the Sino-Soviet treaty. The treaty comprised territorial concessions to China, a military alliance, and a \$300M loan guarantee.³³ The Sino-Soviet alliance weakened in the 1960s under Nikita Khrushchev's leadership. In 1961, Soviet advisors were withdrawn from China and the Soviets attacked Albania, a satellite of China.³⁴ Through the 1970s, Soviet and Chinese border troops increased significantly until restraint collapsed. Each attempting to defend status in the region, the

Soviets invaded Afghanistan in December 1978 and the Chinese attacked Vietnam in February 1979.³⁵ Both nations failed to achieve increased regional influence and were forced to withdraw.

The years 1986 and 1989 were pivotal in Sino-Soviet relations between Mikhail Gorbachev and Mao Zedong. Russia and China agreed to border troop reductions, nuclear weapons reduction and troop withdrawal from Afghanistan and Cambodia (Russia also pressured Vietnam to withdraw from Cambodia).³⁶ The present-day stage of Sino-Russian relations started in April 1996. President Jiang Zemin and President Boris Yeltsin presented the new concept of 'Strategic Partnership' characterized by constructive cooperation, coordination, equality and mutual trust where economic aspects have secured the region.³⁷ Both states believe the economic partnership, arms sales, and military technology transfers forged by China and Russia will serve as a stabilizing factor on China's northern border.

Japan, viewed by China as the expansionist aggressor of Asia, can scarcely overcome the animosity from the occupation and harsh treatment of the Chinese from 1931 to 1945.³⁸ Economic considerations prompted China and Japan to normalize relations in the first Sino-Japanese Friendship Treaty in 1978, although the mistrust continued on the military front due to arms build-up of Japanese armed forces and Chinese arms sales to belligerent parties in the Middle East.³⁹ The status of Japanese Self-Defense Forces (JSDF) serves as a measure (for China) of Japanese intentions in the region. Article Nine of the Japanese national constitution prohibits Japanese development of offensive

armed forces and participation in combat operations. JSDF 1990s participation in peace operations in Cambodia, Mozambique, and the Persian Gulf raised concerns in Beijing.⁴⁰ Any further expansion of the power or roles of the JSDF is certain to meet with stringent protest from Beijing.

Korea, to the west of the Sea of Japan serves as another source of instability in the region. China researchers consider Beijing's position one of preserving stability while maintaining slow progress toward reunification several decades, twenty to fifty years in the future.⁴¹ An unimpressive North Korean economy balanced against a steadily recovering South Korean economy have prompted some realignments in China's policy toward Korean unification and mandatory removal of U.S. military forces from the peninsula. In 1996, South Korea invested \$830M in the Shandong province and \$516M in the rust belt of Northeast China; two-way trade was just short of \$20B.⁴²

In contrast, North Korea has proved a resilient nation in spite of economic difficulties. Pyongyang's violation of the Agreed Framework of 1994 that called for "negotiations with the U.S. and the Republic of Korea (ROK), instituting basic economic reforms, and reduction of military hostilities," has followed a consistent pattern of increased tensions, negotiations, and violations of agreements.⁴³ China has repeatedly voiced plans to avoid intervention in Korea as long as the U.S. abides by the same rules. Many consider the ultimate source of China's nonintervention policy stems from both economic considerations and the Taiwanese reunification efforts. Hostilities initiated by the PRC in Korea are

unlikely until the Asian economic crisis is resolved and an external force poses a direct threat to China's sovereignty.

Vietnam, Indonesia, India and Pakistan while not posing a direct threat to China's sovereignty serve as part of the buffer states and economic partnerships in the Asian-Pacific region. China and Vietnam re-established diplomatic ties in 1991 and have pursued peaceful resolution of border disputes and maritime issues. A few years later, Beijing earned diplomatic credibility among ASEAN for noninterference during the 1998 internal dispute in Jakarta, Indonesia.⁴⁴ While Vietnam and Indonesia are silent as far as conflict with China, India and Pakistan's 1998 detonations of nuclear weapons in their respective nations heightened tensions in the region. Additionally, on-going military operations in the Jammu and Kashmir territories have raised concerns in China.

China's ties to Pakistan started in the early 1960s as a political balance to Russia's support for India. China provided military support through the 1990s when both China and North Korea supplied Pakistan with missiles and nuclear technology transfers.⁴⁵ China has maintained a delicate balance within the region through border resolution negotiations with India and calls for both Pakistan and India to avoid further nuclear testing and abide by the conditions of the nuclear nonproliferation treaty. India and Pakistan stopped short of accepting the nuclear nonproliferation treaty, but signed the Lahore Agreement in Lahore, Pakistan on February 20, 1999. The Lahore Agreement pledged "advance notification of ballistic missile tests, notification of accidental or unauthorized use of nuclear weapons, agreements to prevent incidents at sea,

cooperation in information technology, consultation of travel and creation of a committee to resolve POW and civilian detainee issues.”⁴⁶ With the exception of internal instability and concerns over proliferation of weapons of mass destruction (WMD), China has very little concern of being drawn into a war unexpectedly over internal or cross-border disputes from Vietnam, Indonesia, India or Pakistan.

Tensions over the oil-rich deposits in the Spratly Islands constitute a continuous dispute among several states (China, Malaysia, Philippines, Taiwan and Vietnam) in the Asian-Pacific region. Chinese analysts assert “scrambling for resources” constitute the primary source of wars.⁴⁷ Since the December 1997 China-ASEAN talks in Kuala Lumpur produced an agreement to table regional differences and pursue joint development in the Spratly Islands, Beijing has made only verbal and diplomatic attempts to assert sovereignty.⁴⁸ Many nations in the region carefully watch China’s actions in the Spratly Islands to detect any hints of hegemonic intentions. For the present, China’s policy of peaceful coexistence and economic partnership prevail.

Finally, the U.S. presence in the Asian-Pacific region is extensive and poses both a potential threat and a stabilizing factor for China. U.S. vital security and economic issues reinforce the need for both nations to forge a “cooperative strategic partnership.” China’s analysts identify six areas where the U.S. is creating or influencing chaos in the Asian-Pacific region: NATO enlargement, the U.S.-Japanese alliance, negotiating power (Dayton Peace Accords), JSDF funding, perpetuation of “China threat theories,” and increased influence among

former Soviet nations.⁴⁹ The U.S. Asian-Pacific strategy of overseas presence, power projection and bilateral alliances appear to directly support China's characterization of the U.S. unhealthy influence in the region. However, the "Asian economic crisis" recovery has been slow, causing most Asian nations to place modernization efforts on hold, and rely on the U.S. to guarantee regional stability.⁵⁰

Disparate views exist on the positive or negative aspects of U.S. presence in the Asian-Pacific region. From one vantage point, China views U.S.-Japanese and U.S.-Taiwanese bilateral agreements as a direct counter to Chinese power in the region. Conversely, China views the U.S. as a tension-reducing factor between India and Pakistan's nuclear aspirations and Korea's WMD proliferation.⁵¹ To guarantee stability, U.S. overseas presence in the region totals approximately 100,000 personnel consisting of 36,000 in Korea, 45,000 in Japan/Okinawa and the remainder afloat or on Guam (combat forces include 2 divisions, 3.2 fighter wing equivalents, 1 carrier battle group, and 1 amphibious ready group). The overwhelming technological advantage and power projection capability of the U.S. are sufficient to enhance stability in the region and establish conditions for economic recovery. Economic recovery should pacify interstate conflicts from reaching military confrontation in the short term. In early 2000, the net assessment for the Asian-Pacific region is one of continued integration and disintegration with U.S. presence a certainty and the U.S.-PRC power balance in the region in doubt.

Summary.

China is experiencing a period of transition toward a more open, conciliatory power in the Asian-Pacific region. Internal disputes in the Xinjiang-Uighur region have been mitigated through crafty diplomatic and economic gestures with the five neighboring states, establishing a mutual agreement to punish terrorists, eliminate cross-border excursions and forge joint financial ventures. On-going disputes over the one China policy in relation to Taiwan have subsided with U.S. diplomatic efforts, increased military-to-military relations, and stronger Chinese-Taiwanese economic ties. The Chinese no longer resort exclusively to military force to resolve internal conflicts.

Additionally, China has adopted a policy of multilateral security arrangements and economic partnerships in external disputes. Sino-Soviet relations remain consistent with agreements in the mid-1980s to decrease border troop concentration, settle border disputes and conduct military and technology exchanges. Although mistrust exists, the Sino-Japanese Friendship Treaty of 1978 has withstood condemnation over JSDF peacekeeping deployments and U.S.-Japanese development of a ballistic theater missile defense system, and economic ties persist. In the Koreas, South Asia and South China Sea, China continues to practice a policy of noninterference in internal affairs of neighboring states and encourage economic partnerships to improve China's power base in the Asian-Pacific region. The conditions exist for a conflict in the Asian-Pacific region, however, the emphasis on building a stronger economy minimize the likelihood of a Chinese offensive strike against neighboring countries or an

offensive strike against Chinese territory or interests. For the present, the potential losses simply outweigh the possible gains of PRC offensive military operations.

Chapter 3 Future War Theories

China's National Defense Policy is based on the five principles of peaceful coexistence: "mutual respect for territorial integrity and sovereignty, mutual non-aggression, noninterference in other's internal affairs, equality and mutual benefit, and peaceful coexistence."⁵² To support the five principles of peaceful coexistence, China's armed forces are charged with "consolidating national defense, resisting aggression, curbing armed subversion, and defending the state's sovereignty, unity, territorial integrity and security."⁵³ These five guiding principles frame the Chinese future war theories and subsequent technology programs. *China's National Defense White Paper* also stresses the principle of self-defense, criticizing other nation's antiquated adherence to multi-nation security pacts and military alliances. China's self-defense posture, in theory, opposes arms races and WMD proliferation.

Mutually supportive of China's self-defense posture and stated "no first strike" policy, the major national defense concepts are regional stability, economic prosperity, military modernization, and sovereignty. The issue of sovereignty is at the foundation of every political and economic negotiation with

China. Due to the criticality of this major national defense concept, China has refined the definition of sovereignty within a six-category framework:

1. Disputed territories to the PRC (Taiwan and Macao) returned.
2. Border disputes and problems of demarcation resolved.
3. Indigenous non-Han population opposition groups (Xinjiang and Tibet) neutralized.
4. Multiple competing claims (South China Sea) resolved.
5. Unwarranted foreign meddling in domestic affairs mitigated.
6. International pressure for China to accede to multilateral instruments and protocols eliminated.⁵⁴

The six-category framework for sovereignty coincides very closely with China's perceived internal and external threats. A closer review of the prevalent future war theories reveal a strict adherence to the prescribed principles and concepts in China's National Defense strategy. In China's case as with the U.S., national strategy serves as the foundation for theory, doctrine, and modernization.

Schools of Thought on Future Warfare.

In order to accomplish China's National Defense Policy, the PLA must comprehensively evaluate the strategic and operational military environment. Several schools of thought on future warfare have emerged in China since the early 1980s. The first group is closely tied to China's roots with Mao under the People's War school. Neo-Maoist or People's War school proponents include Communist Party officials, senior military officers, and People's Armed Police leaders. The People's War proponents are the least influential future warfare

theorists, most likely due to their philosophy of trading space for time, surrendering territory, and mobilizing the populous for guerrilla warfare.

Despite the limited influence of the People's War school, Chinese analysts consider the PLA best suited to fight a People's War in a defensive posture within the borders of China. The reality of political and economic decisions made in the 1970s and early 1980s have produced a force that must now adapt to an entirely new strategic and operational environment. A heavy reliance on existing weapons to defeat a technologically superior enemy through strategy, deception, and sheer overwhelming numbers are classic tenets of People's War.⁵⁵ The People's war school views the invasion of China and the use of nuclear weapons as the major threat to China's sovereignty. People's War scenarios involve the "U.S., Russia, or Japan, protracted struggles, and millions of militiamen."⁵⁶

The second group follows the Revolution in Military Affairs concept and believes the PLA must prepare for an international "RMA for the 21st century."⁵⁷ Proponents for the RMA concept are retired and serving general officers and senior colonels assigned to influential military institutions. The RMA school proponents consider the People's War school economically and militarily unfeasible. The People's War tenet of trading space for time places the majority of the industrial centers located along the Pacific Ocean or eastern coast of China vulnerable to attack or occupation by hostile forces. Additionally, expanding China's influence throughout the region is considerably more difficult without air bases within sufficient distance of the coast to respond to regional

threats. RMA scenarios target military science to assess factors leading to a major military innovation. The focus is on "advanced technology weapons, communications, and reconnaissance platforms and information systems for attack, protection, and monitoring."⁵⁸ The RMA School seeks a great leap forward in information technology that renders current Western technological innovations obsolete.

The third and primary group of future warfare theorists suggests future war will involve "local wars under modern, high technology conditions (LWUMHTC)." The Local War concept encompasses a broad scope of conflicts ranging from small-scale local contingencies to just short of a global or major nuclear war. The Local War scenarios planning factors include superpower opponents, wars in close proximity to China's border, shallow invasion of Chinese territory, involves quick military decisions, and can be countered by rapid reaction forces.⁵⁹ The LWUMHTC School is most closely aligned with China's perceived external threats and economic attainability for the short-term (ten to twenty years).

China's political and military leadership adopted the Local War concept in the mid-1990s. President Jiang Zemin coined the term LWUMHTC in 1993 and his influence among Communist Party members delivered great financial benefits and priority to experimentation and implementation of the concept. The PLA supported President Zemin's concept and further developed the Modern High Technology school of thought to guide military modernization and research. PLA military theorists identify the characteristics of LWUMHTC: limited

geographic scope, limited political objectives, short duration, high-intensity operational tempo, maneuver warfare, lethality, high speed logistics, near-total battlefield awareness, C2 and information intensive, nonlinear battlefields, multidimensional combat, and joint.⁶⁰ The characteristics are very similar to the U.S. and Coalition operations in Desert Storm.

The PLA has studied Operation Desert Storm and adapted future warfare theories to counter or at the very least balance Western technology present in neighboring Asian-Pacific states. The Active Defense doctrine adopted by the PLA in the mid-1980s emphasized fighting forward, deterring the first blow, checking the initial enemy advance, and concentrating firepower. Active Defense integrates well with the concept of LWUMHTC. In many respects, LWUMHTC is an advanced version of Desert Storm with a great dependence on technology, rapidity, precision, and lethality. The PLAAF serves as one of the leading military components to capitalize on the opportunity to fulfill a major role in advancing LWUMHTC tenets.

Future Air Warfare Theories.

With the Local War proponents garnering the support of the President and many influential military leaders, viable future air warfare theories must complement the LWUMHTC school of thought. One major component of the LWUMHTC involves rapid reaction forces. The Rapid Reaction Force (RRF) concept developed out of Chinese analysis of the 1991 Gulf War. PLA military analysts concluded "modern war involved high-technology that can fulfill both tactical and strategic objectives, serve political ends, and render large-scale

warfare obsolete. Additionally, high technology makes quick victory possible, requires force composition changes, and demands new forms of combined operations."⁶¹ The resultant RRF is a calculated response to technological gaps in military capability that seek to deter internal and external aggressors. The PLAAF considers its assets uniquely postured to seize the initiative in military modernization efforts and deliver a credible force to PRC leaders to avoid mass army (million-man militia) responses across extended distances.

The PLAAF rapid reaction force consists of the 15th Airborne Corps with three subordinate airborne brigades and one fighter aviation division consisting of three fighter regiments, one ground attack regiment, bomber regiment, airborne early warning aircraft, electronic countermeasures aircraft, reconnaissance aircraft, and special troops within each theater of operations.⁶² The RRF's key elements are training, speed, strength, and effectiveness.⁶³ The RRF's key elements were tested in several exercises conducted across three eastern military regions. The PLAAF assessed methods to fulfill classic air defense missions while surging to operate as a RRF. In order to provide air defense under the RRF concept, the PLAAF classified air defense into three types or groupings. Although defense of China's major cities remains a critical mission for the PLAAF, this seemingly minor concept is a fundamental shift for the operation of air forces. The PLAAF could now begin to package forces to concentrate in three distinct mission elements, small campaigns defending a strategic position, large campaigns defending a battle area, and large campaigns

defending multiple battle areas.⁶⁴ Theoretically, the PLAAF has been granted free reign to develop power projection concepts heretofore unimaginable.

Colonel Ming Zengfu, an influential air warfare theorist serves at the Air Force Command Institute in Beijing. He writes on issues of Air Force defense operations and evaluates the future environment of PLAAF employment. His concentration on 21st century emerging technology and USAF concepts complements the LWUMHTC school of thought and supports the RRF methodology. Rather than air theory or doctrine, Colonel Zengfu establishes the likely employment methods of air power that constitute a viable deterrent or can strike with lethality and maintain a high-intensity operational tempo. The diversified air employment concepts range includes:

1. Air Deterrence (covers an expansive area including hostile territory with three key advantages—"effective for fixed period with wide coverage, low political risk, and operates under a range of conditions").
2. No Fly Zones (forbidden airspace over hostile territory that prevents an enemy air force from threatening one's own air freedom of movement).
3. Limited Air Strikes for Peacekeeping Missions (strictly controlled, small-scale operations with limited aims).
4. Air Blockades at Sea (a bedrock mission to protect sea interests—sea blockade considered inseparable from air blockade due to the interlocking roles and increased complexity of struggles between blockaders and antiblockaders).
5. Strategic Airlift (enhances RRF operations through high speed, extended range, and expanded large freight volume).
6. Precision/Surgical Operation Air Strikes (sudden attack on the enemy's sensitive strategic targets).

7. Joint Operations ("strategic and campaign depth using specialized functions such as, reconnaissance, electronic warfare, aerial mining, and feints").⁶⁵

The PLAAF air employment concepts cover the requirements of the LWUMHTC by focusing on threats in close proximity to China's border, stressing rapidity, and responding with mass. Additionally, these seven air employment concepts can be combined to respond to the three distinct mission elements crucial to balancing the PLAAF air defense and RRF role. Through a disciplined evaluation of USAF tenets, U.S. future warfare theories, PRC national strategy, and LWUMHTC concepts, the PLAAF has framed a manageable road map for military modernization.

Technology Requirements for Future Air Warfare.

PLAAF fulfillment of the extensive air employment concepts addressed by Colonel Ming Zengfu depends on continual technological improvements. China's current concept of forward defense is problematic since strategically the PLA has "limited force projection capabilities, weak logistics, small combat sustainability, and no overseas basing."⁶⁶ The PLAAF are expected under the LWUMHTC to respond rapidly, operate at extended ranges, and conduct extended-loiter missions. The Local War proponents focus on power projection capability out to the first two island chains eastward from the mainland (500 and 1000 miles respectively), an area that can influence U.S. naval and air forces in the western Pacific.⁶⁷ Considerations for technology upgrades include aging obsolete aircraft, poor logistical support systems, limited airborne reconnaissance or

suppression of enemy air defense assets, inadequate combat training, and rudimentary command and control systems.⁶⁸

The Chinese established a Military Critical Technologies List (MCTL) that identifies "key means to rapidly project fire power against an adversary in the air and on land and sea."⁶⁹ The key air power technology systems used to assess China's power projection capability are aeronautics systems (fixed wing aircraft, gas turbines, ammunition), electronics (components, guidance, navigation), manufacturing-fabrication (robotics, airframes, sensors), and signature control (modeling, design, testing, integration, logistics). China has the technology in airframes and modeling for signature control, two of the necessary thirteen recognized sub-areas required for developing power projection air power technologies.⁷⁰ Additionally, China possesses limited capability to develop and produce large quantities of ammunition, bombs, fusing, and missiles for continuous air operations. In spite of other technology shortcomings, China has achieved a "pocket of excellence" in long-range reconnaissance and strike capability in missile technology.⁷¹ With the LWUMHTC focus on conventional weapons over nuclear weapons, the PLAAF is technologically-challenged when compared to Japan, Taiwan or South Korea and must extend acquisition efforts beyond China's borders to close the technological gap and make their concepts an operational reality. The ideas or "invisible weapons" are present in the PLA and the PLAAF, and the U.S. must track closely the financial expenditures on modern military hardware that furthers China's sustained power projection capability beyond the current 500-mile capability.

Summary.

China's 1997 National Defense Policy publication presented the five principles of peaceful coexistence for the conduct of foreign, economic, and military policy. The central principle remains one of maintaining sovereignty over Mainland territorial interests and peripheral geographical and economic interests. Future warfare theorists formulated several schools of thought to modernize the military forces to meet the expectations identified in the *National Defense White Paper*. The three schools of thought are the People's War school, Revolution in Military Affairs school, and the Local Wars under Modern High Technology Conditions school. Since 1993, President Jiang Zemin supported the Local War school and their ideas have remained the most influential in the modernization effort. The Local War school focused on rapid reaction forces, power projection, and quick decisive wars. Colonel Ming Zengfu identified seven key growth areas for 21st century air weapons that complement the Local War school concepts: "higher precision, increased stealth, improved night vision, increased long-range attack ability, increased destruction power, increased command and control capacity, and increased electromagnetic confrontation capacity."⁷² China has established the conceptual framework for modernization and has proven resilient in the quest for influence and strength within the Asian-Pacific region.

Chapter 4 China's Military Modernization

The People's Republic of China understands the strategic and operational environment of modern warfare from recent observations of U.S.-Coalition efforts in Operation Desert Storm in the Kuwaiti Theater and Operation Allied Force over Serbia. In order to deter aggression within the Asian-Pacific region, the PRC has embarked on a coordinated power projection modernization program within the PLAAF and the aviation industry. Chapter four highlights the specific aircraft, weapons, and information technology improvements; investments in pilot and maintenance technical training; and, revisions in the PLAAF organizational structure. An evaluation of China's actual progress toward modernization provides a better representation of the linkage between national policy, future warfare theory, and air employment.

Aircraft and Weapons Technology Modernization.

The PRC and the PLAAF have experienced minimal success in the past designing and producing state-of-the-art Chinese built aircraft and weapons. In 1971, during the Cultural Revolution, the air force ordered development of 27 different types of aircraft. This effort resulted in no new aircraft and great disruption of existing programs, later failures can be traced to poor requirement definition, extended development time, and inadequate design capability.⁷³ Historical dependence on the former Soviet Union for aircraft, weapons, and technological expertise have placed the PLAAF at a disadvantage for large pools of skilled labor to equip the required high technology air forces. In 1983, a

revitalized push from the Central Military Commission (CMC) during a national defense-industry conference demanded some improvements from the PLAAF. The CMC issued a directive of future wartime tasks for the PLAAF to defend strategic ports and provide air cover for strategic deployment of mass troops, air domination in the military regions, strategic attack on high-value enemy targets, nuclear counterattack, and strategic aerial reconnaissance.⁷⁴

The PLAAF started formulating a future air warfare strategy and modernizing through acquisition of Western avionics, airframes, and weapons. PLAAF reformers were caught between two competing policies for an Open Door Policy for acquiring foreign air-launched weapons and avionics and the policy of self-reliance. The PRC stated policy of self-reliance failed in 1988 when “ 48.8 percent of aircraft, 53.9 percent of aircraft engines, 42 percent of radar systems, 50 percent of HQ-2 surface to air missiles (SAMs), and 42 percent of HQ-2 missile guidance sites were not operational.”⁷⁵

The Commission of Science, Technology, and Industry for National Defense (CONSTIND) under the direction of the CMC heightened emphasis on domestic air defense against a lightning strike from China's Western-equipped neighbors. In the early 1990s, the PLAAF was forced to reduce equipment inventories, eliminate obsolete equipment, separate first-line combat units, and readjust the flying hour program. This action resulted in a short-term increase in air force equipment readiness for engines, radar systems, SAMs, and missile guidance.⁷⁶

Coupled with technological upgrades the intellectual capital of the PLAAF was engaged in redefining air strategy. The slogan of the PLAAF "quick reaction, integrated coordination, and combat in depth" began to take shape in policy and structure decisions.⁷⁷ The PLAAF mindset shifted to an offensive focus, including for the first time access to control strategic long-range bomber air groups, collection and intelligence assets, and guaranteed logistical support in a conventional war. The combat in depth strategy caused the PLAAF to distribute air forces in a front-line, rear construct with fighters forward and bombers, transports, and attackers in the rear as a second-strike deterrent.

A great portion of the PLAAF was restructured, fundamentally changing the operational control of air forces. The air combat units were divided into "quick reaction air groups, alert air groups, and strategic reserves."⁷⁸ To increase survivability of the frontier or forward deployed air groups, extensive camouflage, use of semi-hardened shelters, dispersion, alternative emergency landing sites, and emergency refueling techniques were instituted. Additionally, the CMC established a joint civil-military venture to design a comprehensive national air defense network. The air defense network objectives included minimizing destruction and recovery time after air raids and drafting legislation.⁷⁹ Russia under the Sino-Russian Protocol II agreement for sale of military technology sold the PLAAF an advanced air defense system in July 1993.

Recent admission by the PLAAF of a capability gap with Western air forces in the early 1990s, signaled a new era of civil-military cooperation to modernize the conventional air force equaled only to the 1960s nuclear

acquisition effort. The Chinese learned some lessons from Russia's difficulties with the breakaway republics, and have proceeded with caution militarily while making gains economically. The PLAAF has purchased 72 SU-27s and deployed 48 to bases in Wuhu, Anhui Province, and Suixi, Guangdong Province.⁸⁰ The relocation of these advanced fighter aircraft places them within striking distance of Korea, Taiwan, and Japan. Additionally, the Aviation ministry is co-producing around 200 SU-27s, F-10 fighters and upgrading the F-8II aircraft.⁸¹ Further negotiations with Israel, Iran, Great Britain and Pakistan continue to build the PLAAF's advanced fighter force, early warning aircraft, and airborne refueling capability. China's calculated modernization has gained a stealth fighter capability, all weather air interdiction, and air superiority capability that is judged capable of rivaling regional powers by 2010.⁸²

Although China has focused on improving the fighter aircraft force and capability, the PLAAF has maintained interest in various other power projection platforms and technologies. In early 1994, the Chinese purchased ten IL-76 Mainstay transports located at the PLAAF's 13th Air Division near Wuhan to support the air force's airborne troops.⁸³ China also encouraged the development of a flight simulation center in the Kummings Province by the Boeing Aircraft Corporation and the U.S. firm, Flight Safety to draw regional airline pilots into the area and increase technical capability of Chinese pilots.⁸⁴ The PRC, the PLAAF, and the Aviation Industry have continued to coordinate efforts to improve the economic viability of China while steadily refining military capabilities. Much of the avionics and software technology gained through civil

economic ventures with Western countries has benefited the Chinese defense industry. In a 1997 exhibition in Beijing's Military Museum, the PLA displayed a sensor-to-shooter target acquisition system that linked remotely piloted vehicles, intelligence and communications architectures, and global positioning satellites to cruise missiles, ballistic missiles and air strikes providing the real-time capability required for air dominance and power projection.⁸⁵

The commercial aircraft industry has been a success story for China. The civil aviation industry flies "over 500 transport aircraft across 70 airlines, 13 main line passenger planes were jointly made with the Mydao Company."⁸⁶ The aviation industry has exported several hundred aircraft to ten countries, along with aircraft engines, parachutes, and aircraft spare parts. The concept of developing transport aircraft for dual usage by civil and military agencies enhances the PLAAF's power projection capability through the RRF concept. In the late 1980s, China's space technology started sales on the international market. The Long-March-2, 3 and 4 carrier rockets and retrieval satellites were used by former West Germany, France, Australia, and an Asian satellite company.⁸⁷ China's advances in space technology display a great propensity for projecting power through tactical and strategic missiles.

Technological advances in space and the aircraft industry were not chance occurrences, but the reward for a calculated agenda by four noted technical experts and renowned scientists. On March 3, 1986, Wang Daheng (the space program's most prominent optical physicist) and three colleagues presented a proposal to the leader Deng Xiaoping regarding a streamlined

science and technology research and development process to enhance the economy and protect China's national security interests.⁸⁸ The four scientists proposed special technical panels to focus on "automation, biotechnology, energy, information technology, lasers, new materials, and space technology" emphasizing international competition instead of the military focus of the 1950s to the 1970s.⁸⁹ Wang's initiatives became institutionalized as official policy in 1988 as the 863 Plan gained the full support of Deng Xiaoping. As a result, Wang's strategic weapons alumni ascended to every top science and technology policy post in the PRC and have focused on four major state goals:

1. The 863 Plan should anchor China's effort to close the technology gap.
2. Targets seed money at projects with direct implications for long-range industrial competitiveness and military strength.
3. Aims to fashion a symbiotic connection between basic and applied work.
4. Seeks to fashion a symbiotic relationship between science, engineering, and industrialization to force scientist to think in applied terms when seeking grants.⁹⁰

Although the 863 Plan only emphasized seven key industries or technology target areas, the program has expanded competition, heightened product quality, and flattened the research and development hierarchy producing dual civil and military benefits.

PLAAF Technical Training Improvements.

The PLAAF has made several key changes in the technical training of PLAAF pilots and maintenance personnel. Competing interests between

fractured air force modernization efforts and rising ground border tensions in Vietnam in the mid-1970s exposed training and leadership shortfalls. Fifty percent of pilots were incapable of instrument landings, most were unable to hit targets from wide angles of attack, few pilots conducted live-fire missions, and one-third of commanders were considered incompetent.⁹¹ When Deng Xiaoping directed the CMC in 1977, he launched a renewed air force modernization effort focusing on training, aircraft capability, air domination, and the aviation industry. Deng Xiaoping believed "without air cover for the army and navy, the enemy air force will run rampant and winning a future war is out of the question."⁹² One key facet of developing a modern air force involved combat-focused training.

Kenneth Allen, Senior Associate at the Henry L. Stimson Center in Washington DC, has researched and published studies on the PLAAF logistics, maintenance, training and modernization efforts. He presented a talk in 1998 at a conference co-sponsored by the RAND Center for Asia-Pacific Policy and the Taiwan-based Chinese Council of Advanced Policy Studies in San Diego, California. Mr. Allen evaluated what has changed from the ill-equipped PLAAF of the 1970s to the late 1990s, and discovered some drastically different circumstances. Most noteworthy was the "blue Army" aggressor unit to train new combat tactics in order to fight a future high technology war.⁹³ PLAAF pilot training has intensified with the incorporation of varying weather conditions, low altitude flying and over water extended-duration training. Additionally, 45 percent of the flight units' combat regiments conduct live-ammunition targeting practice in simulated combat environments (Red Flag-type training areas), conduct guided-

missile targeting practice, and practice rapid deployment to fixed and auxiliary airfields.⁹⁴

While the pilots are experiencing greater combat training, the maintainers are honing their skills and improving the logistics infrastructure. The PLAAF have established a Davis-Monthan type facility to store over 1,000 aircraft removed from the inventory and designed an excellent multi-functional computerized and telecommunication command system for the maintenance, meteorological and flight training conditions to share a common picture of the operational air environment.⁹⁵ Maintenance personnel train at the "blue aggressor" real battlefield training base which comprises air and ground tactical training ranges, simulated runways built to scale, a SAM base, anti-aircraft gun positions, radar and radar support vehicles, simulated enemy command posts, ammunition depots, and oil depots. In a joint 1995 high technology ground and air attack exercise, PLAAF logistics and maintenance personnel restored oil to a bombed air station by laying 30 km of pipeline and supported over 30 combat planes and several combat support aircraft (included attack planes, large transport planes, armed helicopters, transport helicopters, reconnaissance, and electronic warfare aircraft).⁹⁶ The distributed attack launched from unidentified airfields within three minutes of each other, presented a glimpse of the offensive-minded, power projection PLAAF strategy.

The PRC and Information Technology Modernization Efforts.

China is identified as "one of three countries pushing the envelope on information warfare (IW) strategy development behind the U.S. and Russia."⁹⁷

Although China recognizes the significance of information technology to winning in future warfare, China's information warfare or "soft" warfare capability is limited. In the information warfare technology areas of electronic attack, electronic protection, optical countermeasures, and optical counter-counter measures, China has only limited capability in electronic attack.⁹⁸ Expanding the review to information systems technologies, China has some emerging capability in computer-assisted design and manufacturing, information security, networks and switching with limited capability in human systems interface, signal processing, transmission systems, and software.⁹⁹

Intellectually, China has invested a great deal of thought in information warfare and reviewing the wide body of international literature regarding this topic. Information warfare strategists taut "the concept of information dominance through command and control warfare, using a combination of air power, special forces, and strategic missile units to strike an adversary's information infrastructure."¹⁰⁰ Chinese IW theorists couple the concept of "overcoming the superior with the inferior" with the view of IW as a preemption weapon.¹⁰¹ The PLAAF's role in information dominance involves long-range or over-the-horizon warfare against strategic targets and early warning. The PLAAF will benefit from the newly acquired space-based satellite imagery, reconnaissance, and communication capability to establish an integrated sensor-to-shooter and air defense network. Since the information technologies China desires are available worldwide, advances in information technology modernization is estimated to dramatically improve within the next decade.¹⁰² For the present, IW serves as an

asymmetric opportunity for China within a limited sphere of influence in the Asian-Pacific region.

Organizational Changes in the PLAAF.

The PLAAF was described by Project Air Force RAND researchers in 1995 as a "tightly structured system that stifled initiative and failed to make full use of available resources."¹⁰³ The PLAAF was organized into five branches: aviation, antiaircraft artillery (AAA), SAMs, radar, and communications. The main arm was the aviation branch which included the fighters, ground attack aircraft, bombers, transports, reconnaissance aircraft, and airborne troops.¹⁰⁴ The Aviation branch was organized into air divisions, regiments, groups, squadrons, and flights with a Military and Party committee command structure. The flying regiments normally remained within their assigned military region and performed the primary missions of support to the ground forces and air defense.

The AAA and SAM troops are organized into combined brigades with subordinate battalions who provide defense for China's major cities. In the late 1980s, most of the AAA units were transferred to the Army or the Air Force Reserve units.¹⁰⁵ The Radar branch is organized into regiments, battalions, companies or sites and operated as independent regiments with two reporting chains. Radar unit tracks of aircraft are reported through the next higher Air Force headquarters and the General Staff Department (GSD) command center.¹⁰⁶ The Communications branch is organized under each Military Region Air Force (MRAF-military regions shown on Map 4) in battalions and subordinate companies and platoons. The PLAAF chain of command starts at the Party's

Military Commission through the GSD and continues through Headquarters Air Force, the MRAF headquarters, air corps and command posts down to the operational units.¹⁰⁷ Based on the Military Region construct for the PLA and the PLAAF, centralized control of all air forces was deemed unnecessary in 1995.

The PLAAF of 2000 and the 21st century will experience some fundamental changes in the organizational structure and operational chain of command. The PLAAF continued the PLA path of cutting manpower and equipment while modifying force structure to conduct joint operations.¹⁰⁸ Under the "quick reaction, integrated coordination, and combat in depth strategy," the PLAAF gained control organizationally over corps- and division-level air units, crossing the previously discrete seven greater military region commands.¹⁰⁹ Based on the PLAAF's new offensive-minded strategy, the MRAF boundaries are considered more pliable in order to centrally control all air assets and organize more simultaneous, distributed air attacks. The prominence of air warfare in modern and future conflicts has caused a shift in the intellectual and organizational construct of China's air forces. PLAAF commanders have reorganized air combat units into quick reaction air groups, alert air groups, and strategic reserves.¹¹⁰ A merging of strategic and theater combat units in joint operations has demonstrated a new willingness by the PLAAF to adapt to a changing environment.

Summary.

The PLAAF's military modernization efforts cross the spectrum of USAF categories for success concentrating on aircraft and weapons technology modernization, technical training improvements, information technology research and development, and organizational changes. The PRC has shifted from the policy of self-reliance to one of foreign acquisition through direct military sales and scientific-civil industry exchanges. Subsequently, the PLAAF adapts the scientific-civil industry acquisitions of strategic lift aircraft, telecommunications systems, space systems, air-ground command and control networks into dual-usage assets. Technological improvements coupled with continuous evaluation and modifications of combat training and organizational restructuring enhance the flexibility of the PLAAF to accomplish wartime tasks. Although, the PLAAF does not have the entire infrastructure to sustain a prolonged power projection campaign beyond a 500-mile reach, the components are present for a quick, short-duration, limited aim strike to protect Chinese regional interests.



Map 4. China Military Regions¹¹¹

Chapter 5 Conclusion

A military force does not have an operational capability until it can actually perform the operational requirement to standard. The process of turning a requirement into a capability is a complicated process at the strategic and operational levels of war. It is the result of the synergy that accrues when the critical elements of a military system are developed and then integrated holistically to focus on a particular warfighting requirement or set of requirements.¹¹²

Many PLA analysts believe the lack of technological underpinnings and the operational skills essential for joint warfare in the 21st century render the PLA armed forces woefully unprepared.¹¹³ However, a review of the four basic elements of a military system (doctrine, force structure, personnel, and systems) required to translate requirements into capabilities paints a slightly different picture of the PLA and the PLAAF in the 21st century. In each basic element, the PLAAF has made some significant strides over the last ten to twenty years. The changing global marketplace and security environment has forced some fundamental changes in China's National Military Strategy.

China's 1997 formal publication of a National Military Strategy was a signal of a more open society that recognized a need to expand economic markets and establish partnerships to ensure long-term survival. The vastness of China's geography and population demand a well-structured vision and modernization effort for the 21st Century. Faced with internal and external threats to her sovereignty, the PRC articulated five principles of peaceful

coexistence and the four concepts of national defense that would frame all modernization efforts.

China's principles of peaceful coexistence have guided interactions and negotiations with her neighbors in the Asian-Pacific region. Most recently in the Xinjian-Uighur internal unrest and territorial disputes over the Spratly Islands, China has demonstrated new initiatives to settle disagreements through preemptive diplomacy and economic guarantees for cooperation. China joined in concert with international urgings for a peaceful settlement to the nuclear testing exchanges between India and Pakistan, facilitating the Lahore Agreement signed in February 1999. Concerns over Taiwanese independence bids are one of the few threats to sovereignty requiring near-term military power projection.

PLA future warfare theory and PLAAF air doctrine and employment concepts focus on such a scenario, with Taiwan seeking independence and involving external powers in Chinese internal matters. The most influential of the three future warfare schools is dedicated to modernizing the PLA and the PLAAF to fight a local modern high-technology war. The local high-technology theorists have not only the support of President Jiang Zemin, but also the financial and technical support of China's most renowned scientists and Party Budget officials. With control of every top science and technology policy post and the purse strings to fund new initiatives, the strategic weapons alumni are poised to make the local high-technology school ideas a reality in the 21st century.

The Local War school technology initiatives concentrate on lethality, high-speed logistics, near-total battlefield awareness, C2, information dominance, and

joint operations. Assessments consider the Chinese defense-industrial complex incapable of providing the technology base required for China to compete against technologically superior Western powers and partners in the Asian-Pacific region. To overcome this technology infrastructure shortfall, China has engaged in targeted purchases of hardware, components, and software through civil and military channels. Historic ties with Russia have produced a "pocket of excellence" in missile technology and greatly improved fighter aircraft and precision weaponry capability. Negotiations with Israel, Iran, and Great Britain improved China's airborne early warning and airborne refueling capacity. U.S. and other Western civil aircraft industries sold airliners to China, making the Chinese aircraft industry one of the best in the Asian-Pacific region. The PRC goal of promoting dual usage of technology in the civil and military sector reaped benefits in the information and intelligence architectures. The PLA's 1997 exhibition of an integrated sensor-to-shooter target acquisition system demonstrated China's propensity for incorporating multiple civil technologies into a comprehensive defense system.

The PLAAF has focused on organizational modernization efforts while technological changes are ongoing. Prior to the 1990s, the PLAAF was organized, trained, and operated exclusively within the seven military regions. Incorporating the Local War school ideas and the Rapid Reaction Force concepts, the PLAAF became involved in numerous joint exercises where old organizational structures hampered performance and unity of effort. The PLAAF reorganized in quick reaction air groups, alert air groups, and strategic reserves

and centralized control of air assets across military region boundaries.

Reinforcing the change in structure and doctrine, the PLAAF instituted an intense combat training regimen for pilots and maintainers. The new training program has produced a higher readiness rate operationally and logistically with PLAAF personnel prepared to operate from fixed and austere locations, in all-weather conditions, and on extended-range missions. Although the entire force is not combat ready, strides are being made in this area.

The PLAAF through strategy, doctrine, structure, personnel, and systems are modernizing for the 21st century. The PRC provided the national defense strategy for preparing for local modern high-technology warfare and all indicators suggests the PLAAF is methodically achieving State objectives. Time is on the side of the PRC, to expand economic markets and reinvest the capital into technological improvements for dual civil-military usage. The PLAAF has all the required building blocks for a power projection force in the Asian-Pacific region and barring any premature encounter with the U.S., China will achieve her goals of reunification with Taiwan, peaceful coexistence, and economic stability.

U.S.-PRC Future Interaction.

China's military and economic modernization efforts afford the U.S. an opportunity to establish new partnerships for the 21st century. The initial partnership should be diplomatic with a formalized, semi-permanent confluence of scholars, scientists, economists, business people, diplomats, and military officers answerable to the National Security Council (NSC). The collective expertise of these people will serve as a source of stability for the continuity of

U.S.-PRC policy and inform the process for a more comprehensive articulation of National Security Strategy (NSS) in the Asian-Pacific region. The concept for the NSC China Working Group could be comparable to a strategic policy nodal analysis assessment team. The exchange of ideas, interactions between various systems, and disciplined analysis of potential second, third, and fourth-order effects provides decision-makers with a matrix of interrelated options. These interrelated options can serve as national or strategic flexible deterrent options to guide diplomatic, informational, military, and economic campaigns to secure U.S. interests in the Asian-Pacific region.

Another facet of the NSC China Working Group concept is the regular exchange of ideas and visits with counterparts in China. To alleviate much of the diplomatic posturing that occurs during a formal presidential visit, the Working Group should travel separate from official State-to-State visits.¹¹⁴ The purpose of the NSC China Working Group exchange is to establish liaison with influential members of the Communist Party apparatus in the science and technology, commerce, and defense departments. The synergy generated through the exchange program provides a feedback loop for assessing the continued viability of the national flexible deterrent options and informs the process for greater NSS refinement.

The NSS refinement serves as the basis for diplomatic, informational, military and economic policies with China. Diplomatically, the current State Department strategies should continue and compliment the other instruments of power. One emphasis item for the State Department is the waging of a strategic

information campaign that articulates through multiple mediums the economic and military policies of the U.S. in the Asian-Pacific region. If the U.S. policy is to promote free and open international trade while reducing the proliferation of WMD and complimentary technologies, the information campaign from diplomats, business people, and defense personnel should work in harmony and reinforce information campaign objectives. A national information campaign frames the issues for more effective U.S.-PRC military-to-military engagement.

The National Military Strategy (NMS) advocates engagement as a principle role for U.S. military forces. With military forces engaging the former Russian States, Eastern Europe, the Middle East nations, and other countries around the globe, a large increase in military-to-military contacts with China appears unlikely in the near-term (five years). In many regards, an increased military-to-military exchange beyond Pacific Command's current level may hamper economic and diplomatic efforts by further highlighting the great gulf between U.S and PRC technologies. For now, prudence dictates continuous monitoring of emerging military technologies and capabilities of the PLA and the PLAAF.

Summary.

U.S. political and military strategists, while proceeding with caution should continue the dialogue through conferences and business exchanges to alleviate false impressions of Chinese or U.S hegemonic intentions in the Asian-Pacific region. Both nations benefit from regional stability and presence in the region. The current-day conventional forces of the PLAAF does not pose a major threat

to the continental U.S., however the expanding capabilities of the Chinese Rapid Reaction Forces could impact U.S. interests in the Asian-Pacific region and must be closely monitored. The PLAAF as a part of the emerging joint PLA forces and the PRC's strong belief in the power of ideas constitutes an emerging power projection capability in the 21st Century. To better understand and monitor China's emerging power projection capability, the U.S. interaction with the PRC should be focused, coordinated, and informed. A possible mechanism for informing NSS is through a NSC China Working Group that provides a strategic-level nodal analysis of diplomatic, informational, military, and economic options. A refined NSS provides vision for a more focused NMS and ultimately affects U.S. vital interests. China and Asian-Pacific stability rank among the U.S. vital national security interests for the 21st Century.

¹ Senior Colonel Chen Zhou, "Chinese Modern Local War and U.S. Limited War," *Chinese Views of Future War*, Washington DC, National Defense University, March 1997, p 241. His article discusses the facts surrounding China's intervention or framework for Chinese modern local war compared to the U.S. framework for policies of war intervention. Serves as a research analyst at the Strategy Department, Academy of Military Science, Beijing and has published several works including *Theory and Practice of the People's Liberation Army's Democratic Institutions*.

² *Joint Doctrine Encyclopedia*, 16 July 1997, p 294-295.

³ Thomas L. Friedman, *The Lexus and the Olive Tree*, New York: Farrar, Straus and Giroux, 1999, p 7. Thomas Friedman is a Foreign Affairs columnist for the New York Times and has unparalleled access to international leaders, business people, scientists, educators, and common people. His objective was to clarify how the world works in the new age of globalization where the tension exists between global integration of markets and ties to ancient cultures, geography, tradition, and community. He predicts globalization will cause a nation to disintegrate or to change

internally through a democratization of technology, finance, information, and decision-making (voluntarily donning the 'golden straitjacket') to remain competitive.

⁴ Thomas L. Friedman, *The Lexus and the Olive Tree*, New York: Farrar, Straus and Giroux, 1999, p ix-119.

⁵ GEN Ronald R. Fogleman and HON Sheila E. Widnall, Chief of Staff of the Air Force and Secretary of the Air Force, *Global Engagement: Vision for the 21st Century Air Force*, Washington D C: Headquarters, United States Air Force, released December 1997, available on-line www.dtic.mil: accessed on 22 January 2000.

⁶ Dr. Ehsan Ahrari, "China Changes its Strategic Mindset—Part One," *JANE'S Intelligence Review*, November 1999, available on-line from www.janes.com, accessed on 23 January 2000, p 42. (Dr. Ahrari is the Professor of National Security and Strategy at the Joint combined Warfighting School, AFSC, Norfolk VA).

⁷ Ibid, p 39.

⁸ Richard Solomon, U.S. Institute of Peace, Hans Binnendijk Hans and Ronald N. Montaperto (Ed.), *Strategic Trends in China*, Institute for National Strategic Studies, Washington D C: National Defense University, 1998, p 55. (Mr. Solomon downplays the growing military prowess of China based on economic shortfalls and destabilizing internal factors).

Edward B. Atkeson, MGEN (RET.), *The People's Republic of China in Transition: An Assessment of the People's Liberation Army*. Arlington, VA: Institute of Land Warfare, February 1998, p 7. (MGEN Atkeson acknowledges the internal factors affecting China, but still credits their potential as an effective military power in the Asian-Pacific region).

⁹ Mel Gurtov and Byong-Moo Hwang, *China's Security: The New Roles of the Military*, Boulder, Colorado: Lynne Rienner Publishers, Inc., 1998, p 70-80. (Mr Gurtov is professor of political science and international studies at Portland State University and editor in chief of *Asian Perspective*. Byong-Moo Hwang is professor of strategic studies at Korea national Defense University in Seoul, S. Korea. They have collaborated on several books on China and Global Politics. The work focuses on China's recent security policies and strategic doctrine, military modernization, and economic policies).

¹⁰ Edward B. Atkeson, MGEN (RET.), *The People's Republic of China in Transition: An Assessment of the People's Liberation Army*. Arlington, VA: Institute of Land Warfare, February 1998, p 2.

¹¹ Ibid, p 7.

¹² Hans Binnendijk and Ronald N. Montaperto (ed.), *Strategic Trends in China*, Washington DC: Institute for National Strategic Studies, National Defense University, 1998, p x.

¹³ Kenneth W. Allen, Glenn Krumel and Jonathan D. Pollack, Project AIR FORCE RAND Corporation, *China's Air Force Enters the 21st Century*, Santa Monica, CA, 1995, p 168.

¹⁴ Ibid, p 142.

¹⁵ John Wilson Lewis and Xue Litai, "China's Search for a Modern Air Force," *International Security* Vol. 24, No. 1, Summer 1999, p 81-88. Authors are members of the Stanford University Center for International Security and Cooperation and co-authored a number of studies on Chinese military programs.

¹⁶ Edward B. Atkeson, MGEN (RET.), *The People's Republic of China in Transition: An Assessment of the People's Liberation Army*. Arlington, VA: Institute of Land Warfare, February 1998, p 4.

¹⁷ Ibid, p 5.

¹⁸ Michael McDevitt, 'Geographic Ruminations,' *The Chinese Armed Forces in the 21st Century*. Carlisle, PA: Strategic Studies Institute, December 1999, p 2. Senior Fellow at C N A Corporation, a not for profit organization focusing on U.S. security policy in East Asia. Retired from the USN in 1997 as Commandant of the National War College.

¹⁹ China's Major Cities Map. Fair use exemption granted 31 March 2000 to reprint one map credited to ESRI and World Set from the website: www.nationalgeographic.com/mapmachine.

²⁰ China's Linguistic Regions Map. Fair use exemption granted on 31 March 2000 to reprint from the website: www.lib.utexas.edu/libs/PCL/map_coll/china.

²¹ Richard Solomon, *Strategic Trends in China*, Washington, DC: Institute for National Strategic Studies, National Defense University, 1998, p 56. Fellow at the U.S. Institute of Peace, focuses on Asian affairs.

²² *Background Notes: China*, August 1999, p 5-6. Available on line at www.state.gov/www/background_notes/china_899_bgn.html/. Accessed on 21 February 2000.

²³ Eric A. McVadon, "The Chinese Military and the Peripheral States in the 21st Century: A Security Tour D'Horizon," *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 21-23. Retired USN Rear Admiral and senior consultant on East Asian security affairs for Arete Associates, Center for Naval Analyses and Director of Asia-Pacific Studies with National Security Planning Associates. Former defense and navy attaché at the U.S. Embassy in Beijing, 1990-92.

²⁴ *Ibid*, p 23.

²⁵ Shelley Rigger, "Taiwan: Finding Opportunity in Crisis," *Current History*, September 1999, Vol. 98, No. 629, p 289.

²⁶ Patrick Tyler, "The (Ab)normalization of U.S.-Chinese Relations," *Foreign Affairs*, September/October 1999, Vol. 78, No. 5, p 122. A former Beijing Bureau Chief for the *New York Times*.

²⁷ John Wilson Lewis and Xue Litai, "China's Search for a Modern Air Force," *International Security* Vol. 24, No. 1, Summer 1999, p 88.

²⁸ *Ibid*, p 88.

²⁹ *Ibid*, p 89.

³⁰ Nicholas Lardy and Kevin Nealer, *Strategic Trends in China*, Washington DC: Institute for National Strategic Studies, National Defense University, 1998, p 33-40. Nicolas Lardy is a member of the Brookings Institute and Kevin Nealer is a member of the Scowcroft Group.

³¹ Christopher Patten, *East and West: China, Power, and the Future of Asia*, New York: Time Books, 1998, p 177. As the final Governor of Hong Kong under British colonial rule, Christopher Patten realized "there were limits to how far the Chinese would be prepared to allow their political rage to take them." (p 58.) He believed the economic, financial, and political interests were so intertwined and lucrative that the Chinese leaders were willing to send relatives and friends to Hong Kong to make fortunes therefore the West had little to fear from military action or unconstrained government violence. Patten's view of Western nations was the idea that to trade with China or any other authoritarian regime it was essential to keep in those governments' good books, "political harmony was essential to business profits." (p 83) Globalization has caused Western nations and Authoritarian regimes to compromise principles and policies to make profits.

³² Hans Binnendijk and Ronald N. Montaperto (ed.), *Strategic Trends in China*, Washington DC: Institute for National Strategic Studies, National Defense University, 1998, p x.

³³ Paul Beaver (ed.), "China in Crisis: The Role of the Military," *Jane's Special Report*, Sentinel House, UK: Jane's Information Group, 1989, p 43. This special report identifies the circumstances surrounding the Tiananmen Square debacle, relations with neighboring countries, and modernization efforts of the PLA.

³⁴ *Ibid*, p 44.

³⁵ *Ibid*, p 45.

³⁶ *Ibid*, p 45-46.

³⁷ Eric A. McVadon, "The Chinese Military and the Peripheral States in the 21st Century: A Security Tour D'Horizon," *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 26.

³⁸ Michael McDevitt, "Geographic Ruminations," *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 34-35.

³⁹ Paul Beaver (ed.), "China in Crisis: The Role of the Military," *Jane's Special Report*, Sentinel House, UK: Jane's Information Group, 1989, p 55-56.

⁴⁰ Eric A. McVadon, "The Chinese Military and the Peripheral States in the 21st Century: A Security Tour D'Horizon, *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 35.

⁴¹ Eric A. McVadon, "The Chinese Military and the Peripheral States in the 21st Century: A Security Tour D'Horizon, *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 47.

⁴² Ibid, p 50.

⁴³ Ronald N. Montaperto, "Asia-Pacific Region: Murky Future?" *Strategic Assessment 1999: Priorities for a Turbulent World*, Washington, DC: Institute for National Strategic Studies, National Defense University, 1999, p 136.

⁴⁴ Eric A. McVadon, "The Chinese Military and the Peripheral States in the 21st Century: A Security Tour D'Horizon, *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 64.

⁴⁵ Paul Kreisberg, "South Asia: Nuclear Geopolitics?" *Strategic Assessment 1999: Priorities for a Turbulent World*, Washington, DC: Institute for National Strategic Studies, National Defense University, 1999, p 146. Paul Kreisberg is retired from the U.S. Department of State and a contributor to the annual National Defense University Strategic Assessment.

⁴⁶ Ibid, p 141.

⁴⁷ Michael Pillsbury, "PLA Capabilities in the 21st Century: How Does China Assess its Future Security Needs?" *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 101. Served as an Associate Fellow at the Institute for National Strategic Studies, National Defense University and a Senior Fellow at the Atlantic Council of the United States. The Office of Net Assessment, Department of Defense sponsors him. Served as an Under Secretary of Defense for Policy Planning, Special Assistant for Asian Affairs and a defense analyst for the RAND Corporation. Taught graduate courses in Chinese foreign policy at Georgetown University, University of California at Los Angeles, and University of South Carolina.

⁴⁸ Eric A. McVadon, "The Chinese Military and the Peripheral States in the 21st Century: A Security Tour D'Horizon," *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 57-58.

⁴⁹ Michael Pillsbury, "PLA Capabilities in the 21st Century: How Does China Assess Its Future Security Needs?" *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 105-106. The expanded version of the Chinese concern for U.S. influence in the region follows: 1) U.S. exploitation of Russia's weakness through NATO enlargement. 2) U.S. coercion of Japan to increase financial support for U.S. bases and forces in Japan under the Defense Guidelines. 3) Bosnian settlement at Dayton, dominating European NATO allies. 4) U.S.-Japanese alliance, which could result in a struggle that weakens Washington and Beijing. 5) U.S. perpetuation of the "China threat theory" blocks China's influence in the region. 6) Big power struggles to capture former Soviet sphere of influence nations in Central Asia.

⁵⁰ Ronald N. Montaperto, "Asia-Pacific Region: Murky Future?" *Strategic Assessment 1999: Priorities for a Turbulent World*, Washington, DC: Institute for National Strategic Studies, National Defense University, 1999, p 122.

⁵¹ Ibid, p 137.

⁵² *China's National Defense*, White Paper by the Information Office of the State Council, People's Republic of China, July 27, 1998, p 4.

⁵³ Ibid, p 7.

⁵⁴ David M. Finkelstein, "China's National Military Strategy," *Conference Proceedings: The People's Liberation Army in the Information Age*, 1999, p 111. Specialist in Chinese security affairs at the Center for Naval Analyses Corporation in Alexandria, VA. Former China Foreign Area Officer for sixteen years.

⁵⁵ Michael Pillsbury, "PLA Capabilities in the 21st Century: How Does China Assess Its Future Security Needs?" *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 119.

⁵⁶ Michael Pillsbury, "PLA Capabilities in the 21st Century: How Does China Assess Its Future Security Needs?" *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 112.

⁵⁷ David M. Finkelstein, "China's National Military Strategy," *Conference Proceedings: The People's Liberation Army in the Information Age*, 1999, p 125.

⁵⁸ Michael Pillsbury, "PLA Capabilities in the 21st Century: How Does China Assess Its Future Security Needs?" *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 114.

⁵⁹ Ibid, p 113. China believes their rapid reaction forces will be capable of defeating local attacks from the following countries: Japan, Vietnam, India, Central Asia, Taiwan, Philippines, Malaysia, or Indonesia.

⁶⁰ David M. Finkelstein, "China's National Military Strategy," *Conference Proceedings: The People's Liberation Army in the Information Age*, 1999, p 127-128.

⁶¹ Andrew N.D. Yang and Col. Milton Wen-Chung Liao (Ret.), "PLA Rapid Reaction Forces: Concept, Training, and Preliminary Assessment," *Conference Proceedings: The People's Liberation Army in the Information Age*, Santa Monica, CA: RAND Corporation, 1999, p 49.

⁶² Kenneth W. Allen, Glenn Krumel and Jonathan D. Pollack, *China's Air Force Enters the 21st Century*, Santa Monica, CA: Project AIR FORCE RAND Corporation, 1995, p 112.

Andrew N.D. Yang and Col. Milton Wen-Chung Liao (Ret.), "PLA Rapid Reaction Forces: Concept, Training, and Preliminary Assessment," *Conference Proceedings: The People's Liberation Army in the Information Age*, Santa Monica, CA: RAND Corporation, 1999, p 51.

⁶³ Andrew N.D. Yang and Col. Milton Wen-Chung Liao (Ret.), "PLA Rapid Reaction Forces: Concept, Training, and Preliminary Assessment," *Conference Proceedings: The People's Liberation Army in the Information Age*, Santa Monica, CA: RAND Corporation, 1999, p 50.

⁶⁴ Kenneth W. Allen, Glenn Krumel and Jonathan D. Pollack, *China's Air Force Enters the 21st Century*, Santa Monica, CA: Project AIR FORCE RAND Corporation, 1995, p 112.

⁶⁵ Colonel Ming Zengfu, "21st Century Air Warfare," *Chinese Views of Future War*, Washington DC, National Defense University, March 1997, p 288-292.

⁶⁶ David M. Finkelstein, "China's National Military Strategy," *Conference Proceedings: The People's Liberation Army in the Information Age*, 1999, p 133.

⁶⁷ Michael Pillsbury, "PLA Capabilities in the 21st Century: How Does China Assess Its Future Security Needs?" *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 139.

⁶⁸ Kenneth W. Allen, Glenn Krumel and Jonathan D. Pollack, *China's Air Force Enters the 21st Century*, Santa Monica, CA: Project AIR FORCE RAND Corporation, 1995, p xvi-xix.

⁶⁹ Bernard D. Cole and Paul H. B. Godwin, "Advanced Military Technology and the PLA: Priorities and Capabilities for the 21st Century," *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 192.

⁷⁰ Ibid, p 193.

⁷¹ Ibid, p 195.

⁷² Colonel Ming Zengfu, "21st Century Air Warfare," *Chinese Views of Future War*, Washington DC, National Defense University, March 1997, p 300.

⁷³ Kenneth W. Allen, Glenn Krumel and Jonathan D. Pollack, Project AIR FORCE RAND Corporation, *China's Air Force Enters the 21st Century*, Santa Monica, CA, 1995, p 147.

⁷⁴ John Wilson Lewis and Xue Litai, "China's Search for a Modern Air Force," *International Security*, Summer 1999, Vol. 24, No. 1, p 73. Both authors are members of the Stanford University Center for International Security and Cooperation and have authored studies on Chinese military programs.

⁷⁵ Ibid, p 74.

⁷⁶ Ibid, p 75.

⁷⁷ Ibid, p 79.

⁷⁸ Ibid, p 81.

- ⁷⁹ Ibid, p 81.
- ⁸⁰ Ibid, p 85.
- ⁸¹ Kenneth W. Allen, "PLA Air Force Logistics and Maintenance: What Has Changed?" *Conference Proceedings: The People's Liberation Army in the Information Age*, 1999, p 80.
- ⁸² Richard Fisher, "China's Defense Policy and Posture," *Strategic Trends in China*, Washington DC: Institute for National Strategic Studies, National Defense University, 1998, p 62.
- ⁸³ Ibid, p 157.
- ⁸⁴ Larry Wortzel, *China's Military Potential*, Carlisle, PA: Strategic Studies Institute, October 1998, p 9. A former Military Intelligence Officer and Foreign Area Officer concentrating on China and East Asia. Also served as Assistant Attaché in China from 1995 to 1997.
- ⁸⁵ Ibid, p 14.
- ⁸⁶ Shen Zhenhuan, "Reform of China's Defense Industry," *Chinese Views of Future War*, Washington DC, National Defense University, March 1997, p 191. He is a Senior Researcher at the State Planning Commission.
- ⁸⁷ Ibid, p 194.
- ⁸⁸ Evan A. Feigenbaum, "Who's Behind China's High-Technology 'Revolution?'" *International Security*, Summer 1999, Vol. 24, No. 1, p 109. A Fellow at the Belfer Center for Science and International Affairs at Harvard University's John F. Kennedy School of Government.
- ⁸⁹ Ibid, p 111.
- ⁹⁰ Ibid, p 113-115.
- ⁹¹ John Wilson Lewis and Xue Litai, "China's Search for a Modern Air Force," *International Security*, Summer 1999, Vol. 24, No. 1, p 69.
- ⁹² Ibid, p 70.
- ⁹³ Kenneth W. Allen, "PLA Air Force Logistics and Maintenance: What Has Changed?" *Conference Proceedings: The People's Liberation Army in the Information Age*, 1999, p 80.
- ⁹⁴ Ibid, p 84.
- ⁹⁵ Ibid, p 79.
- ⁹⁶ Ibid, p 91.
- ⁹⁷ James Mulvenon, "The PLA and Information Warfare," *Conference Proceedings: The People's Liberation Army in the Information Age*, 1999, p 175.
- ⁹⁸ Bernard D. Cole and Paul H. B. Godwin, "Advanced Military Technology and the PLA: Priorities and Capabilities for the 21st Century," *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 183.
- ⁹⁹ Ibid, p 184.
- ¹⁰⁰ Mark A. Stokes, *China's Strategic Modernization: Implications for the United States*, Carlisle, PA: Strategic Studies Institute, September 1999, p 28. Served as Assistant Air Attaché in Beijing from 1992-1995 and researched emerging PLA operational concepts and their implications for U.S. interests in the Asia-Pacific region.
- ¹⁰¹ James Mulvenon, "The PLA and Information Warfare," *Conference Proceedings: The People's Liberation Army in the Information Age*, 1999, p 183.
- ¹⁰² Mark A. Stokes, *China's Strategic Modernization: Implications for the United States*, Carlisle, PA: Strategic Studies Institute, September 1999, p 59.
- ¹⁰³ Kenneth W. Allen, Glenn Krumel and Jonathan D. Pollack, *China's Air Force Enters the 21st Century*, Santa Monica, CA: Project AIR FORCE RAND Corporation, 1995, p xvi.
- ¹⁰⁴ Ibid, p 101.
- ¹⁰⁵ Ibid, p 195.
- ¹⁰⁶ Ibid, p 196.
- ¹⁰⁷ Ibid, p 199.
- ¹⁰⁸ Bernard D. Cole and Paul H. B. Godwin, "Advanced Military Technology and the PLA: Priorities and Capabilities for the 21st Century," *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 200.

¹⁰⁹ John Wilson Lewis and Xue Litai, "China's Search for a Modern Air Force," *International Security*, Summer 1999, Vol. 24, No. 1, p 80.

¹¹⁰ Ibid, p 81.

¹¹¹ China's Military Regions Map. Fair use exemption granted on 31 March 2000 to reprint from website: www.lib.utexas.edu/libs/PCL/map-coll/china.

¹¹² David M. Finkelstein, "China's National Military Strategy," *Conference Proceedings: The People's Liberation Army in the Information Age*, 1999, p 137. Dr. Finkelstein is a Chinese Security affairs specialist at the Center for Naval Analyses Corporation in Alexandria, VA. Served as a China FAO for over sixteen years, a senior military analyst at the DIA, and as Assistant Defense Intelligence Officer for East Asia and the Pacific in the Pentagon from 1993 to 1997.

¹¹³ Bernard D. Cole and Paul H. B. Godwin, "Advanced Military Technology and the PLA: Priorities and Capabilities for the 21st Century," *The Chinese Armed Forces in the 21st Century*, Carlisle, PA: Strategic Studies Institute, December 1999, p 206.

¹¹⁴ Christopher Patten, *East and West: China, Power, and the Future of Asia*, New York: Time Books, 1998. Governor Patten describes the difficulty of negotiating with the PRC throughout his book. He warns about the Chinese method of public snubs of visiting dignitaries and business people, lengthened conferences to discuss preliminary terms of agreements, and the strong propensity to avoid commitment until the absolute last moment of decision. Governor Patten recommended treating China just like any other country, "no special treatment" to force responsible International behavior economically, diplomatically, and militarily.

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